APPENDIX 1

Lists of Committee, Workgroup, Task Force and Area Synthesis Team Members

Upper Great Lakes Connecting Channels Study
1984 to 1988

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++ St. Clair River (level 3) geographic report was written by B. G. Oliver and W. R. Swain, Eco Logic Inc.

APPENDIX II

GLOSSARY AND UNITS OF MEASURE

MEASUREMENTS & UNITS

mg/L	=	milligram per liter = part per million (ppm)*
ug/L	=	microgram per liter = part per billion (ppb)*
ng/L	=	nanogram per liter = part per trillion (ppt)* (one trillenth part of a gram)
pg/L	=	picograms per litre = part per quadrillion (ppq)
ug/g	=	microgram per gram = part per million (ppm)
mg/kg	=	milligram per kilogram = part per million (ppm)
ug/kg	=	microgram per kilogram = part per billion (ppb)
ng/kg	=	nanogram per kilogram = part per trillion (ppt)
L/d	=	liter per day
m^3/d	=	cubic meters per day
mgd	=	millions of gallons per day
cfs	=	cubic feet per second
m^3/s	=	cubic meters per second
kg/d	=	kilograms per day
lbs/d	=	pounds per day
kg/yr	=	kilograms per year
t/yr	=	tonnes per year
uS/cm	=	microsiemens per centimeter (conductivity)

EQUIVALENT UNITS

meter	= m	1m	= 3.281 feet
kilometer	= km	1 km	= 0.621 miles
gram	= g	1000 g	= 1 kg = 2.205 pounds
tonne	= t	1 t	= 2,205 pounds
liter (Can.)	= L	1 L	= 0.2642 gal (U.S.) = 0.2200 gal

CONVERSION TABLES

To Convert	Multiply By	To Obtain
acres	4.047×10^{-1}	hectares
acres	4.047×10^{3}	sq. meters
centimeters	3.937×10^{-1}	inches
centimeters	1.094×10^{-2}	yards
feet	3.048×10^{-1}	meters
gallons (Imp.)	1.20095	gallons (U.S.)
gallons (U.S.)	8.3267×10^{-1}	gallons (Imp.)
gallons (U.S.)	3.785	liters
gallons (Imp.)	4.542	liters
grams	1.0×10^{-3}	kilograms
grams	3.527×10^{-2}	ounces
grams	2.205×10^{3}	pounds
hectares	2.471	acres
inches	2.540	centimeters
kilograms	1.0×10^{3}	grams
kilograms	2.2046	pounds
kilograms	3.5274×10^{1}	ounces
kilometers	6.214×10^{-1}	miles
kilometers	1.0936×10^{3}	yards
kilometers	3.2808×10^{3}	feet

To Convert	Multiply By	To Obtain
liters (U.S.liquid)	2.642×10^{-1}	gallons
liters	2.201×10^{-1}	gallons (Imp)
meters	3.281	feet
meters	6.214×10^{-4}	miles
meters	1.094	yards
miles	1.609	kilometers
milligrams/liter	1.0	parts/million
ounces	2.8349×10^{1}	grams
ounces (fluid)	2.957×10^{-2}	liters
parts/million	8.354	pounds/million gal.
pounds	4.5359×10^{2}	grams
pounds	4.536×10^{-1}	kilograms
square feet	9.29×10^{-2}	sq. meters
square inches	6.452×10^{2}	sq millimeters
square kilometers	2.471×10^{2}	acres
square kilometers	1.076×10^{7}	sq. ft.
square kilometers	3.861×10^{-1}	sq. miles
square meters	2.471×10^{-4}	acres
temperature ^{o}C	$(^{o}C \times 9/5)+32$	temperature ^{o}F
temperature ^{o}F	$(^{o}F-32) \times 5/9$	temperature ^{o}C
yards	9.144×10^{1}	centimeters
yards	9.144×10^{-4}	kilometers
yards	9.144×10^{-1}	meters

ACRONYMS

ADI	Acceptable Daily Intake: The dose that is anticipated to be without risk to humans when taken daily. It is not assumed that this dose guarantees absolute safety. The determination of the ADI is often based on the application of laboratory animal toxicity data concerning chronic (long-term) doses to the environmental doses to which humans are exposed.
AOC(s)	Areas of Concern: Geographic locations recognized by the International Joint Commission where water, sediment or fish quality are degraded, and the objectives of the Great Lakes Water Quality Agreement of local environmental standards are not being achieved.
BaP	Benzo-a-Pyrene
BAT	Best Available Technology/Treatment
BATEA	Best Available Technology/Treatment Economically Achievable
BCF	Bioconcentration Factor; the ratio of the concentration of a particular substance in an organism to concentration in water.
BCT	Best Conventional Technology.
BEJ	Best Engineering Judgement.
BHC	Benzene Hexachloride or Hexachlorocyclohexane. There are three isomers; alpha, beta, and gamma. Gamma-BHC is the insecticide lindane.
BOD	Biochemical Oxygen Demand: The amount of dissolved oxygen consumed during the decomposition of organic nutrients in water during a controlled period and temperature.
COA	Canada-Ontario Agreement Respecting Water Quality in the Great Lakes.
COD	Chemical Oxygen Demand: The amount of oxygen required to oxidize completely by chemical reagents the oxidizable compounds in an environmental sample.
CofA	Certificate of Approval

CSO	Combined Sewer Overflow; combined storm and sanitary sewer systems.
DCB	Dichlorobenzene
DDD	A natural breakdown product of DDT.
DDE	Dichlorodiphenyldichloroethylene. A natural breakdown product DDT.
DDT	Dichlorodiphenyltrichloroethane: A widely used, very persistent chlorinated pesticide (now banned from production and use in many countries).
DFO	Department of Fisheries and Oceans (Canada)
DOA	Department of Agriculture (Canada)
DOE/EC	Department of Environment/Environment Canada
EC-50	Effective concentration of a substance producing a defined response in 50% of a test population. The higher the EC-50, the less effective the substance is because it requires more material to elicit the desired response.
EP/OR	Environmental Protection, Ontario Region, Environment Canada
EPA	United States Environmental Protection Agency
GLISP	Great Lakes International Surveillance Plan. It provides monitoring and surveillance guidance to U.S. and Canadian agencies responsible for implementing the provisions of the GLWQA that include general surveillance and research needs as well as monitoring for results of remedial actions.
GLWQA	Great Lakes Water Quality Agreement
HCB	Hexachlorobenzene
HCBD	Hexachlorobutadiene
HCE	Hexachloroethane
IJC	International Joint Commission: A binational organization established in 1909 by the Boundary Waters Treaty. Through the IJC, Canada and the United States cooperatively resolve problems along their common border, including water and air pollution, lake levels, power generation and other issues of mutual concern.

LC_{50}	Lethal concentration (by volume) of a toxicant or effluent which is lethal to 50% of the test organism over a specified time period. The higher the LC_{50}, the less toxic it is because it takes more toxicant to elicit the same response.
LD_{50}	Lethal dose which is lethal to 50% of the test organism over a specified time period. The higher the LD_{50}, the less toxic it is because it takes more toxicant to elicit the same response.
MDNR	Michigan Department of Natural Resources
MISA	Municipal-Industrial Strategy for Abatement: The principal goal of this program is the virtual elimination of toxics discharged from point sources to surface waters in Ontario.
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System; a permit system limiting municipal and industrial discharges, administered by U.S.EPA and the states.
NTU	Nephelometric Turbidity Unit
OCS	Octachlorostyrene
OMNR	Ontario Ministry of Natural Resources
OMOE	Ontario Ministry of the Environment/Environment Ontario
PAH	Polynuclear Aromatic Hydrocarbons, also known as Polycyclic Aromatic Hydrocarbons or Polyaromatic Hydrocarbons. Aromatic Hydrocarbons composed of at least 2 fused benzene rings, many of which are potential or suspected carcinogens.
PBB	Polybromated biphenyl; used primarily as a fire retardant.
PCB	Polychlorinated biphenyls; a class of persistent organic chemicals with a potential to bioaccumulate and suspected carcinogens; a family of chemically inert compounds, having the properties of low flammability and volatility and high electric insulation quality. Past applications include use as hydraulic fluids, heat exchange and dielectric fluids; plastisizers for plastics.

pH	The negative power to the base 10 of the hydrogen ion concentration. A measure of acidity or alkalinity of water on a scale from 0 to 14; 7 is neutral; low numbers indicate acidic conditions, high numbers, alkaline.
QCB	Pentachlorobenzene
POTW	Publicly Owned Treatment Works
PTS	Persistent Toxic Substance: Any toxic substance with a half-life in water of greater than eight weeks.
RAP	Remedial Action Plan: This is a plan to be developed with citizen involvement to restore and protect water quality at each of the 42 Areas of Concern in the Great Lakes Basin. The RAP will identify impaired uses, sources of contaminants, desired use goals, target clean-up levels, specific remedial options, schedules for implementation, resource commitments by Michigan and Ontario as well as by the federal governments, municipalities and industries, and monitoring requirements to assess the effectiveness of the remedial options implemented.
SPDES	State Pollutant Discharge Elimination System; a state administered permit limiting municipal and industrial dischargers.
STP	Sewage Treatment Plant
TCB	Trichlorobenzene
TCDD	Tetrachlorodiebenzo-p-dioxins
TCDF	Tetrachlorodibenzofurans
TOTAL DDT	Sum of DDT isomers and metabolites
UGLCCS	Upper Great Lakes Connecting Channels Study
U.S.EPA	United States Environmental Protection Agency
WHO	World Health Organization
WPCP	Water Pollution Control Plant
WTP	Water Treatment Plant (for drinking water)
WWTP	Waste Water Treatment Plan

TERMINOLOGY

ABSORPTION — Penetration of one substance into the body of another.

ACCLIMATION — Physiological and behavioural adjustments of an organism in response to a change in environment. See also Adaptation.

ACCLIMATIZATION — Acclimation of a particular species over several generations in response to marked environmental changes.

ACCUMULATION — Storage and concentration of a chemical in tissue to an amount higher than intake of the chemical. May also apply to the storage and concentration of a chemical in aquatic sediments to levels above those that are present in the water column.

ACUTE — Involving a stimulus severe enough to rapidly induce a response; in bioassay tests, a response observed within 96 hours is typically considered an acute one.

ACUTE TOXICITY — Mortality that is produced within a short period of time, usually 24 to 96 hours.

ADAPTATION — Change in the structure forms or habits of an organism to better fit changed or existing environmental conditions. See also Acclimation.

ADSORPTION — The taking up of one substance at the surface of another.

AEROBIC — The condition associated with the presence of free oxygen in the environment.

ALGA(E) — Simple one celled or many celled micro-organisms, usually free floating, capable of carrying on photosynthesis in aquatic ecosystems.

ALGICIDE — A specific chemical highly toxic to algae. Algicides are often applied to water to control nuisance algal blooms.

ALKALINITY — A measurement of acid neutralization or buffering capability of a solution (See pH).

AMBIENT — An encompassing atmosphere.

AMBIENT WATER — The water column or surface water as opposed to groundwaters or sediments.

AMPULES — A sealed glass container of a know concentration of a substance.

ANADROMOUS — Species which migrate from salt water to fresh water to breed.

ANAEROBE — An organism for whose life processes a complete or nearly complete absence of oxygen is essential.

ANOXIA — The absence of oxygen necessary for sustaining most life. In aquatic ecosystems this refers to the absence of dissolved oxygen in water.

ANTAGONISM — Reduction of the effect of one substance because of the introduction or presence of another substance; e.g. one substance may hinder, or counteract, the toxic influence of another. See also Synergism.

APPLICATION FACTOR — A factor applied to a short-term or acute toxicity test to estimate a concentration of waste that would be safe in a receiving water.

AQUATIC — Living in water.

ASSIMILATION — The absorption, transfer and incorporation of substances (e.g. nutrients by an organism or ecosystem).

ASSIMILATIVE CAPACITY — The ability of a waterbody to transform and/or incorporate substances (e.g. nutrients) by the ecosystem, such that the water quality does not degrade below a predetermined level.

BENTHIC — Of or living on or in the bottom of a water body; benthic region, benthos.

BENTHOS — Bottom dwelling organisms, the benthos comprise: 1) sessile animals such as sponges, some of the worms and many attached algae; 2) creeping forms such as snails and flatworms, and 3) burrowing forms which include most clams and worms, mayflies and midges.

BIOACCUMULATION — Uptake and retention of environmental substances by an organism from both its environment (i.e. directly from the water) and its food.

BIOASSAY — A determination of the concentration or dose of a given material necessary to affect a test organism under stated conditions.

BIOCONCENTRATION The ability of an organism to concentrate substances within its body at concentrations greater than in its surrounding environment or food.

BIOCONCENTRATION FACTOR The ratio of the measured residue within an organism compared to the residue of the substance in the ambient air, water or soil environment of the organism.

BIOLOGICAL MAGNIFICATION The concentration of a chemical up the food chain.

BIOMASS Total dry weight of all organisms in a given area or volume.

BIOMONITORING The use of organisms to test the toxic effects of substances in effluent discharges as well as the chronic toxicity of low level pollutants in the ambient aquatic environment.

BIOTA Species of all the plants and animals occurring within a certain area or region.

CARCINOGEN Cancer causing chemicals or substances.

CHIRONOMID Any of a family of midges that lack piercing mouth parts.

CHRONIC Involving a stimulus that lingers or continues for a long period of time, often one/tenth of the life span or more.

CHRONIC TOXICITY Toxicity marked by a long duration, that produces an adverse effect on organisms. The end result of chronic toxicity can be death although the usual effects are sublethal; e.g. inhibits reproduction or growth. These effects are reflected by changes in the productivity and population structure of the community. See also Acute Toxicity.

COMMUNITY Group of populations of plants and animals in a given place; ecological unit used in a broad sense to include groups of various sizes and degrees of integration.

CONGENER A member of the same taxonomic genus as another plant or animal: Also a different configuration or mixture of a specific chemical usually having radical groups attached in numerous potential locations.

CONTAMINANT A substance foreign to a natural system or present at unnatural concentrations.

CONTAMINATION The introduction of pathogenic or undesirable micro-organisms, toxic and other deleterious substances which renders potable water, air, soils, or biota unfit for use.

CONTROL ORDER/REQUIREMENT AND DIRECTION ORDER Enforceable orders in Ontario.

CONVENTIONAL POLLUTANT A term which includes nutrients, substances which pollutant consume oxygen upon decomposition, materials which produce an oily sludge deposit, and bacteria. Conventional pollutants include phosphorous, nitrogen, chemical oxygen demand, biochemical oxygen demand, oil and grease, volatile solids, and total and fecal coliform, chlorides, etc.

CRITERIA Numerical limits of pollutants established to protect specific water uses.

CRITERION, WATER QUALITY A designated concentration of a constituent based on scientific judgments, that, when not exceeded will protect an organism, a community of organisms, or a prescribed water use with an adequate degree of safety.

CRITICAL LEVEL See Threshold.

CRITICAL RANGE In bioassays the range of magnitude of any factor between the maximum level of concentration at which no organisms responds (frequently mortality) to the minimum level or concentration at which all organisms respond under a given set of conditions.

CUMULATIVE Brought about or increased in strength by successive additions.

CUMULATIVE ACTION Increasingly severe effects due to either storage or concentration of a substance within the organism.

DENSITY Number of individuals in relation to the space.

DETRITUS A product of disintegration, defecation, destruction, or wearing away.

DIATOM Any of a class of minute planktonic unicellular or colonial algae with silicified skeletons.

DIOXIN A group of approximately 75 chemicals of the chlorinated dibenzodioxin family, including 2, 3, 7, 8 - tetrachlorodibenzo-para-dioxin (2,3,7,8 - TCDD) which is generally considered the most toxic form.

DISSOLVED OXYGEN The amount of oxygen dissolved in water.

DRAINAGE BASIN A waterway and the land area drained by it.

DREDGE SPOILS The material removed from the river, lake, or harbour bottom during dredging operations.

DREDGING GUIDELINES Procedural directions designed to minimize the adverse effects of shoreline and underwater excavation with primary emphasis on the concentrations of toxic materials within the dredge spoils.

ECOSYSTEM The interacting complex of living organisms and their non-living environment; the biotic community and its abiotic environment.

EFFLUENT Contaminated waters discharged from facilities to either wastewater sewers or to surface waters.

ENVIRONMENT All the biotic and abiotic factors that actually affect an individual organism at any point in its life cycle.

EPHEMERAL A plant that grows, flowers, and dies in a few days.

EPHEMERA Invertebrates (mayflies) that live as adults only a very short time.

EPILIMNION The warm, upper layer of water in a lake that occurs during summer stratification.

EROSION The wearing away and transportation of soils, rocks and dissolved minerals from the land surface, shorelines, or river bottom by rainfall, running water, wave and current action.

EUTROPHICATION The process of nutrient enrichment that causes high productivity and biomass in an aquatic ecosystem. Eutrophication can be a natural process so it can be a cultural process accelerated by an increase of nutrient loading to a waterbody by human activity.

EXOTIC SPECIES Species that are not native to the Great Lakes and have been intentionally or inadvertently introduced into the system.

FACULTATIVE Exhibiting a broad lifestyle which allows it to survive under a broad range of environmental conditions.

FOODCHAIN The process by which organisms in higher trophic levels gain energy by consuming organisms at lower trophic levels; the dependence for food of organisms upon others in a series, beginning with plants and ending with the largest carnivores.

GOAL An aim or objective towards which to strive; it may represent an ideal condition that is difficult, if not impossible to attain economically.

GREAT LAKES BASIN ECOSYSTEM The interacting components of air, land, water and living organisms, including man, within the drainage basin of the St. Lawrence River at or upstream from the point at which this river becomes the international boundary between Canada and the United States (from Article 1 of the 1978 GLWQ Agreement).

GREAT LAKES WATER QUALITY AGREEMENT (GLWQA) A joint agreement between Canada and the United States which commits the two countries to develop and implement a plan to restore and maintain the many desirable uses of the waters in the Great Lakes Basin. Originally signed in 1978, the Agreement was amended in 1987.

GROUNDWATER Water entrained and flowing below the surface which may supply water to wells and springs.

GUIDELINES Any suggestion or rule that guides or directs; i.e. suggested criteria for programs or effluent limitations.

HALF-LIFE The period of time in which a substance loses half of its active characteristics (used specifically in radiological work); the amount of time required for the concentration of a pollutant to decrease to half of the original value through natural decay or decomposition.

HAZARDOUS SUBSTANCES Chemicals considered to be a threat to man in the environment, including substances which (individually or in combination with other substances) can cause death, disease (including

cancer), behavioural abnormalities, genetic mutations, physiological malfunctions or physical deformities.

HYDROLOGIC CYCLE The natural cycle of water on earth, including precipitation as rain and snow, runoff from land, storage in groundwaters, lakes, streams, and oceans, and evaporation and transpiration (from plants) into the atmosphere to complete the cycle.

HYPOLIMNION The cold, dense, lower layer of water in a lake that occurs during summer stratification.

ICHTHYOLOGY A branch of zoology that deals with fishes.

INCIPIENT LC_{50} The level of the toxicant which is lethal for 50% of individuals exposed for periods sufficiently long that acute lethal action has ceased. Synonymous with lethal threshold concentration.

INCIPIENT LETHAL LEVEL That concentration of a contaminant beyond which an organism could no longer survive for an indefinite period of time.

INSECTICIDE Substances or a mixture of substances intended to prevent, destroy or repel insects.

LACUSTRINE Formed in, or growing in lakes.

LEACHATE Materials dissolved or suspended in water that percolate through solids such as soils, solid wastes and rock layers.

LETHAL Involving a stimulus or effect directly causing death.

LIPOPHILIC Having an affinity for fats or other lipids.

LITTORAL Productive shallow water zone of lakes, rivers or the seas, with light penetration to the bottom; often occupied by rooted aquatic plants.

LOADINGS Total mass of pollutant to a water body over a specified time; e.g. tonnes per year of phosphorus.

MACROPHYTE A member of the macroscopic plant life (i.e. larger than algae) especially of a body of water.

MACROZOOBENTHOS The distribution of macrozoobenthos in an aquatic ecosystem is often used as an index of the impacts of contamination on the system.

MALIGNANT — Resistent to treatment, occurring in severe form and frequently fatal.

MASS BALANCE — An approach to evaluating the sources, transport and fate of contaminants entering a water system, as well as their effects on water quality. In a mass balance budget, the amounts of a contaminant entering the system less the amount leaving the system. If inputs exceed outputs, pollutants are accumulating and contaminant levels are rising. Once a mass balance budget has been established for a pollutant of concern, the long-term effects on water quality can be simulated by mathematical modelling and priorities can be set for research and remedial action.

MUTAGEN — Any substance or effect which alters genetic characteristics or produces an inheritable change in the genetic material.

MUTAGENICITY — The ability of a substance to induce a detectable change in genetic material which can be transmitted to progeny, or from one cell generation to another within an individual.

NONPOINT SOURCE — Source of pollution in which pollutants are discharged over a widespread area or from a number of small inputs rather than from distinct, identifiable sources.

NUTRIENT — A chemical that is an essential raw material for the growth and development of organisms.

ORGANOCHLORINE — Chlorinated hydrocarbon pesticides.

PATHOGEN — A disease causing agent such as bacteria, viruses, and parasites.

PERIPHYTON — Organisms that live attached to underwater surfaces.

PERSISTENT TOXIC SUBSTANCES — Any toxic substance with a half-life in water and greater than eight weeks.

PESTICIDE — Any substance used to kill plants, insects, algae, fungi or other organisms; includes herbicides, insecticides, algicides, fungicides.

PHENOLICS — Any of a number of compounds with the basic structure of phenol but with substitutions made onto this structure. Phenolics are produced during the coking of coal, the distillation of

wood, the operation of gas works and oil refineries, from human and animal wastes, and the microbiological decomposition of organic matter.

PHOTOSYNTHESIS A process occurring in the cells of green plants and some micro-organisms in which solar energy is transformed into stored chemical energy.

PHYTOPHAGOUS Feeding on plants.

PHYTOPLANKTON Minute, microscopic aquatic vegetative life; plant portion of the plankton; the plant community in marine and freshwater situations which floats free in the water and contains many species of algae and diatoms.

POINT SOURCE A source of pollution that is distinct and identifiable, such as an outfall pipe from an industrial plant.

POLLUTION (WATER) Anything causing or inducing objectionable conditions in any watercourse and affecting adversely the environment and use or uses to which the water thereof may be put.

POTABLE WATER Water suitable, on the basis of both health and aesthetic considerations, for drinking or cooking purposes.

PRECAMBRIAN The earliest era of geological history.

PRIMARY TREATMENT Mechanical removal of floating or settable solids from wastewater.

PUBLIC Any person, group, or organization.

RADIONUCLIDE A radioactive material.

RAPTORS Birds of prey.

RAW WATER Surface or groundwater that is available as a source of drinking water, but has not received any treatment.

RESUSPENSION (of sediment) The remixing of sediment particles and pollutants back into the water by storms, currents, organisms and human activities such as dredging.

RIPARIAN Living or located on the bank of a natural watercourse.

SCAUP A diving duck.

SECONDARY TREATMENT Primary treatment plus bacterial action to remove organic parts of the waste.

SEDIMENT The fines or soils on the bottom of the river or lake.

SEICHE An oscillation in water level from one end of a lake to another due to wind or atmospheric pressure. Most dramatic after an intense but local weather disturbance passes over one end of a large lake.

SELENIUM A nonmetallic element that chemically resembles sulfur and is obtained chiefly as a by-product in copper refining, and occurs in allotropic forms of which a gray stable form varies in electrical conductivity with the intensity of its illumination and is used in electronic devices.

SESSILE An animal that is attached to an object or is fixed in place (e.g. barnacles).

SIGMOID CURVE S-shaped curve (e.g. the logistic curve)

SLUDGE The solids removed from waste treatment facilities.

SOLUBILITY Capability of being dissolved.

STABILITY Absence of fluctuations in populations; ability to withstand perturbations without large changes in composition.

STRATIFICATION (or layering) The tendency in deep lakes for distinct layers of water to form as a result of vertical change in temperature and therefore, in the density of water.

SUBACUTE Involving a stimulus below the level that causes death.

SUBCHRONIC Effects from short-term multiple dosage or exposure; usually means exposure for less than three months.

SUB-LETHAL Involving a stimulus below the level that causes death.

SUSPENDED SEDIMENTS Particulate matter suspended in water.

SYNERGISM The joint action of two or more substances is greater than the sum of the action of each of the individual substances. The improvement in performance is achieved because two agents are working together. See also Antagonism.

SYNERGISTIC Interactions of two or more substances or organisms producing a result such that the total effect is greater than the sum of the individual effects.

SYNTHESIS The production of a substance by the union of elements or simpler compounds.

TAXA A group of similar organisms.

TAXONOMICALLY To identify an organism by its structure.

TERATOGEN A substance that increases the incidence of birth defects.

TERATOGENICITY The ability of a substance to produce irreversible birth defects, or anatomical or functional disorders as a result of an effect on the developing embryo.

THERMOCLINE A layer of water in lakes separating cool hypolimnion (lower layer) from the warm epilimnion (surface layer).

THRESHOLD The chemical concentration or dose that must be reached before a given reaction occurs.

TOXIC SUBSTANCE As defined in the Great Lakes Agreement, and substance that adversely affects the health or well being of any living organism.

TOXICITY Quality, state or degree of the harmful effect resulting from alteration of an environmental factor.

TRANSLOCATION Movement of chemicals within a plant or animal; usually refers to systemic herbicides and insecticides that are moved from the point of contact on the plant to other regions of the plant.

TROPHIC ACCUMULATION Passing of a substance through a food chain such that each organism retains all or a portion of the amount in its food and eventually acquires a higher concentration in its flesh than in its food. See also Biological Magnification.

TROPHIC LEVEL Functional classification of organisms in a community according to feeding relationships; the first trophic level includes green plants, the second level includes herbivores; etc.

TROPHIC STATUS A measure of the biological productivity in a body of water. Aquatic ecosystems are characterized as oligotrophic (low productivity), mesotrophic (medium productivity) or eutrophic (high productivity).

TUBIFICID Of aquatic oligochaete or sludge worms which is tolerant to organically enriched waters.

TURBIDITY Deficient in clarity of water.

WATER QUALITY OBJECTIVES Under the Great Lakes Water Quality Agreement, goals set by the Governments of the United States Agreement, goals set by the Governments of the United States and Canada for protection of the uses of the Great Lakes.

WATER QUALITY STANDARD A criterion or objective for a specific water use standard that is incorporated into enforceable regulations.

WIND SET-UP A local rise in water levels caused by winds pushing water to one side of a lake. (See Seiche)